DOCUMENT RESUME

ED 259 674 HE 018 602

AUTHOR Alley, J. David
TITLE Futures Research Data and General Education Reform. AIR 1985 Annual Forum Paper.
PUB DATE May 85
NOTE 24p.; Paper presented at the Annual Forum of the Association for Institutional Research (25th, Portland, OR, April 28-May 1, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Change Strategies; *College Curriculum; *Curriculum; Delphi Technique; *Educational Change; Educational Needs; *Futures (of Society); *General Education; Global Approach; Higher Education; Learning Experience; Long Range Planning; Outcomes of Education; World Affairs
IDENTIFIERS *AIR Forum; *Futures Research

ABSTRACT

The usefulness of futures research data to reform the general education curriculum was assessed in 1984, using the Delphi method. Expert opinion was identified concerning changes in the general education curriculum that should be made in light of conclusions provided in "The Global 2000 Report" and "Megatrends." In addition to stating agreement/disagreement with these two reports, experts in American higher education were asked to specify changes in content, process, and outcomes of the general education curriculum. After four initial rounds of surveys, 18 experts provided their opinions about: the global crisis, the U.S. response, the U.S. in transition, the role of technology, new directions in citizenship, and the value of future planning. Experts indicated the types of knowledge, skills, and values that should be facilitated by the curriculum, and specified important patterns of the curriculum content (e.g., interdisciplinary understanding) and purposes of the content of the curriculum (e.g., problem-solving abilities). Process changes were also indicated concerning facilitating learning, student role, faculty role, and college role. In addition to four suggestions for additional research, five recommendations are offered concerning learning outcomes, instructional practices, and institutional change for general education. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

BEST COPY AVAILABLE

ED259674

FUTURES RESEARCH DATA AND GENERAL EDUCATION REFORM

1985 Association for Institutional Research Forum

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

HE 018 602

by

J. David Alley
Director of Institutional Evaluation and Planning, and Associate Dean
Arkansas College
2300 Highland Road
Batesville, Arkansas 72501
(501) 793-9813

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Fifth Annual Forum of the Association for Institutional Research held at the Portland Hilton in Portland, Oregon, April 28-May 1, 1985. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

Elizabeth F. Fox, Chair
Forum Publications Editorial
Advisory Committee

FUTURES RESEARCH DATA AND GENERAL EDUCATION REFORM

Abstract

What are the conditions in which American higher education will operate at the beginning of the 21st Century? Can educators use futures research data effectively to support curriculum development and positive institutional change? In light of the conclusions of The Global 2000 Report and Megatrends, what changes should be made in the content, processes, and outcomes of general education curricula in American higher education? These questions are addressed in this report of a 1984 Delphi study of a group of experts in American higher education.

FUTURES RESEARCH DATA AND GENERAL EDUCATION REFORM

Introduction

> If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead. Despite greater material output, the world's people will be poorer in many ways than they are today.
>
> For hundreds of millions of the desperately poor, the outlook for food and other necessities of life will be no better. For many it will be worse. Barring revolutionary advances in technology, life for most people on earth will be more precarious in 2000 than it is now--unless the nations of the world act decisively to alter current trends (Global 2000--Vol.I, 1980, p. 1).

Prepared by 13 agencies of the federal government, including the Central Intelligence Agency (CIA) and the Department of Agriculture, the Global 2000 Report projects a world population of 6.35 billion in the year 2000 (up from 4 billion in 1975) and an increased economic gap between the richest and the poorest nations. The Report indicates that catastrophic effects of rising concentrations of carbon dioxide, depletion of stratospheric ozone, deterioration of soils, increased presence of toxic chemicals in the environment, and massive extinction of species are just a little further down the road. Although few, if any, of the problems addressed in the study are amenable to quick technological or policy fixes; "they are inextricably mixed with the world's most perplexing social and economic problems" (1980, p. 40).

In Megatrends (1982, p. 249) Naisbitt says we are now living in the "time of the parenthesis," between the centralized, industrialized, and economically self-contained era of the past and the decentralized, yet global, information economy and era of the future. As a result of this location in time, a new kind of future-oriented learning is needed:

> We must learn from the present how to anticipate the future. When we can do that, we will understand that a trend is not destiny; we will be able to learn from the future the way we have been learning from the past (Naisbitt, 1982, p. 18).

Education itself should be reconceptualized as we move from a short-term perspective of completing high school or college to future-oriented, lifelong learning (Naisbitt, 1982, p. 93). This long-range perspective may signal the need to return to the ideal of a generalist education. Specialized knowledge may become obsolete in the long run; a generalist, committed to lifelong education, can change with the times (Naisbitt, 1982, p. 95-96). Although the Carnegie Foundation for the Advancement of Teaching has described general education in America as a "disaster area" (1977, p. 11), and more recent examination of current practice led Kerr to agree with this conclusion (1984, p. 21), Boyer and Levine suggest that general education "should be reaffirmed not as a sentimental tradition, but precisely because our future well-being, and perhaps even our survival, may depend on whether students understand the reality of interdependence" (1981, p. 22).

To reaffirm American general education properly, the curriculum must be reconsidered in light of its ability to facilitate learning from the future. The "long shadows" cast by trends described in Global 2000 and Megatrends are important futures research data, and they indicate that the hour is late. It is an appropriate challenge for American educators to consider the implications of these futures research reports when weighing the quality of current education.

Problem Situation

Despite the current talk of general education reform, it is important to remember that, historically, education at all levels in American society has been the guardian of

continuity; the new, present generation has been shaped to fit existing institutions and social norms through a past-oriented curriculum (Kauffman, 1981, p. 14). Dewey, in Democracy and Education, argued that an enlightened society is responsible not to transmit and conserve all its existing achievements, but only such as make for a better future society. His argument has had little effect, perhaps because:

> Down through history, most scholars have shown a remarkable capacity for ignoring the present as well as the future. Antiquarian by temperament, they have steadfastly looked backward, extolling the wisdom of bygone ages rather than opening their eyes to what was around and ahead of them. Thus the scholars insisted on the correctness of Aristotle even when Galileo offered visible proof that Aristotle was mistaken. The antiquarian bias of the scholar passed into teaching, and the teacher's function became that of filling the empty heads of students with the culture of the past. . . We should recognize that today's curriculum is the residue of traditions dating back thousands of years, and generally reflects what teachers want to teach more than what young people need to learn (Cornish, 1977, p. 209).

The planning and development process for the general education curriculum must be reoriented toward future realities.

But Levin says that one of the main problems with educational planning today is that educational planners avoid research (1981, p. 92). He argues that educational planning must give up its presumed neutrality and commit itself to significant, research-based efforts for the future. A necessary first step will entail learning about futures research methods now in widespread use outside of education.

The lack of an adequate research basis for curriculum development is most evident. Instead of a rational, enlightened process, the Hazen Foundation (1968) found curriculum development to be a "sport":

> One of the great indoor sports of American faculties is fiddling with the curriculum. The faculty can engage in interminable arguments during years of committee meetings about depth versus breadth. They can fight almost without end about whether education should be providing useful or liberal knowledge. They can write learned books and articles about the difficulties of integrating human knowledge at the time of a knowledge explosion. And of course the battle between general and special education is likely to go on until the end of time. Curricula are constantly being changed. New courses are introduced, new programs offered, new departments are created. . . .

> The harsh truth is that all this activity is generally a waste of time. . . . (in Boyer and Kaplan, 1977, p. 23).

This study focuses on a critically important question facing American higher education -- whether educators can use futures research data effectively in the development of the general education curriculum. Unfortunately, it appears that most futures research data are ignored because of a problematic philosophical assumption apparent throughout the American education system. Toffler (1974) argues: "The base assumption draining American education, one both deceptive and dangerous, is that the future will be like the present."

Postman describes two typical positions educators take with regard to the future. One is that there is nothing much we can do about the future except surrender: "What will be, will be." The other is that the future raises no important challenges: "What is, will be." Both conceive of the future as something that **happens**, not something that is **made** (1983, p. 311).

Postman argues that both positions are dangerously wrong and makes clear his meta-assumption: the future will be a consequence of what we now do as a response to our understanding of the problems we face. The corollaries are: the "future" will not bring anything, "it" is not moving inexorably anywhere, and "it" will not take care of itself (1983, p. 311).

Purpose of the Study

The present study focuses on the general education curriculum of American colleges and universities out of a concern for the twenty-first century. The purpose of the study is to identify and describe expert opinion (using the Delphi method) about changes in the general education curriculum that should be made in light of the conclusions

of the Global 2000 Report and Megatrends. Experts in American higher education have been asked to state their agreement or disagreement with these two reports and to specify changes in three aspects of the typical general educational curriculum suggested by Boyer and Levine in A Quest for Common Learning: content, process, and outcomes.

> How well are we succeeding in translating purpose into practice? How effectively are the myriad general education programs fulfilling the fundamental aims of common learning? To answer these questions, we must look at current programs in terms of content, (what students are required to study), process (how students are required to study), and outcomes (what students are expected to achieve) (Boyer and Levine, 1981, p. 23).

As a result of this research effort, "Selected Futures and General Education: A Delphi Study," the attitudes of a group of experts in American higher education have been determined regarding the future conditions in which they will operate, what they consider significant about the Global 2000 Report and/or Megatrends as a basis for planning in higher education, and what changes should be made in general education curricula.

Methodology

Value judgments about possible future events do not easily lend themselves to "scientific" treatment, at least not in terms of traditional, experimental research designs. Just as case study, documentary analysis, ethnographic research, and many other naturalistic methodologies have evolved because of their power to answer certain types of research questions, futures research methods are now generally accepted in the research community as appropriate for qualitative questions which focus on certain aspects of the future.

In 1980 Phi Delta Kappa obtained funding from the Lilly Endowment to conduct a future-focused study of education. According to study director Shane (1981, p. 3), "in the present context of global conflict, terrorism, and hunger. . . it makes sense to ask

whether U.S. schools need to make substantial changes; and more important, should we modify our present curricular and instructional practices?" This query was directed to 132 internationally respected scholars in the natural and the social sciences. Their responses provided the basis for the monograph, Educating for a New Millennium, (1981).

The present futures research study is related to Shane's. This study analyzes changes needed in the general education curriculum of higher education in light of the Global 2000 Report and Megatrends. It has obtained opinion data from experts in American higher education through use of the Delphi method, "One of the most promising tools available to help educators plan for the future" (Beach, 1981, p. 229).

In general the Delphi method focuses on possible alternative futures, and at the same time, facilitates some agreement about what should be done. In Crawford and Crositt's (1980) comparison of the Delphi with other decision-making alternatives, the Delphi process unequivocally emerged as the most productive decision making model in both quantitative and qualitative outcomes.

This Delphi study has identified the opinions of 18 experts about needed changes in the general education curriculum of American higher education. These experts in American higher education were drawn from the governing Boards of the American Association for Higher Education, the Council for the Advancement of Experiential Learning, and the Association of American Colleges.

A preliminary draft of the Round I survey was pilot-tested on a small group of faculty and administrative staff members at Arkansas College. Their comments and suggestions for improvement were incorporated in the initial letter and survey. The Round I survey invited participants to identify the two or three "most important conclusions" of The Global 2000 Report and Megatrends and to describe their reasons for agreeing or

disagreeing with these conclusions. Then, in light of these conclusions, the participants were asked to identify the two or three most important student learning outcomes and changes in the content and process of general education curricula.

One hundred and one unique statements were identified in the responses to the Round I survey. Round II statements were developed covering the range of suggestions submitted by the experts in Round I. In this round the panel members were asked to indicate the level of their agreement or disagreement with each of the statements on a five-point scale (1=strongly agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree).

The Round III survey was sent to the panel with a statistical summary of the ratings for each statement in Round II. In this round the experts were invited to reconsider their ratings and to provide a rationale for any ratings which they had changed from Round II, where they represented a minority viewpoint, or where they wanted to comment. Because a high level of response stability was reached in Round III, Round IV consisted of the 12 statements from Round III in which the most change and difference of opinion were registered.

The "final results" of the study were analyzed first in the context of the four sections of the survey: conclusions, outcomes, content, and process, and again in the larger context of the literature reviewed in the study. Extreme levels of agreement and disagreement were noted, as well as the group's mean ranking for each statement. Within each section, and for the study as a whole, category sets were developed to faithfully describe the data in terms that are clear and meaningful.

Major Findings

Expert Opinions about the Futures Research Reports

The Global 2000 Report and Megatrends were viewed as important futures research reports, possessing significant implications for general education curricula because of their assessment of future conditions in which American higher education and its graduates may operate (in agreement with Hymovitz, 1981). The basic content of these reports was generally endorsed by the experts in this study. The major conclusions derived from these documents are as follows:

The Global Crisis. An important finding is agreement that the world situation is very serious and worsening. This finding is consistent with other studies identified in the literature review (Botkin, 1979; Peccei, 1981; Sachs, 1983; Murphy, 1983; Boyer, 1984). The "world problematique" is a profound challenge to our capacity to change, but if current policies and practices are not changed, crowding, pollution, ecological stress, political instability, and natural resource depletion will make life in the year 2000 more adverse and precarious for more people than at present. Policy makers need to look at long term consequences rather short term expediencies. They need to concentrate worldwide efforts to deal with the enormous, imminent problem of exceeding the carrying capacity of earth.

The U.S. Response. This study indicates that the global situation necessitates a significant response from the more developed countries and that such is possible. Consumption practices in the U.S. and other developed countries must be changed to avert disastrous stress on global resources. This is consistent with Botkin, 1979; Peccei, 1981; and in opposition to New Study, 1983. The U.S. has a key role to play in facilitating international cooperation, and a moral obligation to play this role in deter-

mining global futures (with Three Thousand Futures, 1980; and Tucker, 1982). Despite the magnitude of this task, optimism is justified. Given the necessity of doing so, we will move to a more global economy, a more global perspective, and a greater degree of global cooperation.

The U.S. in Transition. The U.S. is already moving beyond old social and governmental structures, but has yet to establish a "new operational paradigm." Externally, U.S. world prestige and economic superiority are declining. Internally, the U.S. population is shifting geographically and ethnically, and may suffer increased environmental and inter-group stresses. However, this transitional period between an industrial and an informational society presents enormous opportunity to accomplish positive changes.

The Role of Technology. The new informational era requires a more educated citizenry to assure the humane, beneficial use of new technologies. The future development of technology needs to incorporate interpersonal, "high touch" elements and to be balanced by opportunities for human resource development. Technology itself is no magic panacea, but must be managed carefully and developed within a framework of humanistic values. This is in agreement with Boyer, 1980.

New Directions in Citizenship. The findings of this study indicate that the nature of a capitalist democracy per se does not discourage people from taking control of their lives. On the contrary current social trends to decentralize policy making may provide more opportunities for citizens to participate in government and politics (with Etzioni, 1983).

The Value of Future Planning. The study found that planned change is believed to be possible. The future is not fixed; it is malleable. Social responses to projected

trends can change the trends. (This concurs with Three Thousand Futures, 1980; Cornish, 1980; and Postman, 1983.) New efforts are needed to train national leaders through interdisciplinary, liberal arts education which takes cognizance of the future, a conclusion also reported by Boyer and Kaplan, 1977; and Botkin, 1979. However, because of organizational inertia and resistance to change, a simple understanding of current trends is unlikely to induce useful change in higher education. Cornish (1980) also described this characteristic of modern educational organizations.

Outcomes that Should be Facilitated by the General Education Curriculum

Knowledge. Although students need a general knowledge of social science, natural science and technology, and art and humanities, this study indicates that they especially need to think in terms of "global" knowledge instead of knowledge segregated into traditional, compartmentalized academic disciplines. They need knowledge that will enable them to be informed, thinking citizens with a personal sense of civic responsibility that will result in effective political action. Most important, students need a global world view which encompasses social, political, and economic needs and realities, and anticipates future issues and alternatives, rooted in traditional disciplines, applied to present worldwide realities, and supportive of strategic alternative futures. These findings are congruent with the recommendations of Boyer and Levine, 1981; Gaff, 1980 and 1983; Bowen, 1982; and Wharton, 1982.

Skills. In addition to the foundational skills of reading, writing, computation, computer literacy, verbal communication, and artistic communication, students need critical thinking (crap detection) skills, creative problem-solving skills, and interpersonal competence. They need to possess the complex skills associated with citizenship and lifelong learning. They need to tolerate ambiguity and to change, adapt, and

respond creatively to evolving environments and relationships. These findings are consistent with Gaff, 1983 and Todd, 1983.

Values. What students believe and value are both important outcomes that should be associated with general education. Without appropriate axiological underpinning, knowledge and skills are difficult to acquire and even harder to use. The skills of creative adaptation, lifelong learning, citizenship, and interpersonal competence grow from explicit value orientation. Students must develop humanitarian concern, a keen sense of social responsibility, the ability to look beyond individual needs and cultures to a commitment to "humankind." Therefore, general education must facilitate moral and ethical development, the capacity to select judiciously and embody humane values. These findings are consistent with Shane, 1981; Peters, 1982b; and Lewis, 1983.

Changes that are Needed in the Content of the General Education Curriculum

Patterns of Content. Integration is the key concept that describes these findings. General education should not be just an introduction to the disciplines. The smorgasbord distribution requirements in American higher education usually fail to achieve their general education purpose. General education must be re-configured to better integrate cross-cultural understandings of theory and practice in a framework that encompasses history, present reality, and alternative futures. It must provide an interdisciplinary understanding of the role the U.S. plays in shaping world economic trends, political attitudes, and third world development. These findings are consistent with Tussman, 1969; Levine and Weingart, 1973; Bailey, 1977; Conkright, 1982; Curtis, 1984.

Purposes of Content. General education content should be reconceptualized as a "means" to the "end" of basic competencies, skills, and personal characteristics of human

development rather than as primarily acquisition of knowledge. It should call less on memory and more on higher level cognitive functioning. Content should focus on problem-solving, synthesis and the application of knowledge, and how to make responsible value choices. The content of general education should facilitate the development of the person as an effective, self-aware member of a shared world. These findings support the conclusions of Quistwater, 1979, Boyer and Levine, 1981; Peters, 1982a; and Todd, 1983.

Changes that Should be Made in the Process of the General Education Curriculum

Facilitating Learning. To effectively facilitate learning, general education should involve less lecture and increase opportunities to integrate academic theory and "real life" experiential learning through hands-on problem-solving, internships, and sophisticated work experience (with Botkin, 1979). The use of simulation and problem-solving in student learning should be increased substantially. Also, more decentralized computer learning resources should be made available.

Student Role. Students should become more self-directed, actively participate in, and influence the development of, their own learning activities, modes of study, and educational objectives (with Todd, 1983 and Lewis, 1983). Peer-assisted, collaborative learning should be encouraged, rather than isolated, competitive learning.

Faculty Role. General education faculty must be willing and able to provide remedial learning opportunities for students who lack basic skills, to facilitate the development of lifelong learning skills, and the use of technology for lifelong learning. The key finding is that teaching should be a facilitating process, not just an information transfer process, that must pay more attention to individual student differences. Student-centered, criterion-referenced evaluation of outcomes is needed in addition to

norm-referenced evaluation of content mastery. Greater criticism and rigor in the analysis and interpretation of all learning experiences is needed to better facilitate the process of student learning.

Institutional Role. The rewards and incentives for faculty involved in, and institutional support for, general education must be increased. A professor's success in facilitating student learning outcomes should be recognized in the faculty evaluation process. Clear institutional philosophies of general education must be developed to shape the curriculum effectively (with Tussman, 1969; Boyer and Levine, 1981; and Martin, 1982). And in this process, the learning opportunities gap between the "haves" and the "have nots" must not be allowed to grow. More should be done to support adult learners by fitting content, format, and location to their needs.

The overall major findings of this study are consistent with the important work of Boyer and Levine (1981). The challenge is to return to general education's "historically certain purpose" of affirming connectedness, by focusing on "a shared cultural heritage, a shared agenda of urgent contemporary problems, and a shared future which cannot be ignored" (1981, p. 20). These findings also are congruent with Cornish (1980, p. 427): "The future does not just happen to us; we ourselves create it by what we do and what we fail to do."

Recommendations

On the basis of the findings of this study, the following five recommendations are made. They specifically focus on learning outcomes, instructional practices, and institutional change as they relate to general education. The overall implicit recommendation is that leaders in American higher education must dedicate more time and energy considering the implications of futures research data as part of strategic planning and institutional management.

1) To give general education potency, faculty must coherently incorporate in it the perspectives of the arts, humanities, sciences, social studies, education, and business, not only in terms of theory and practice, but also in terms of the past, present, and future. The scope of this general education matrix should be sufficiently large to facilitate the development of world view outcomes, global in space and past-to-future-oriented in time. Perhaps a new term like "supra-disciplinary" needs to be used to convey the notion of unified, general education curricula in which the "common learning" foundation of undergraduate education is not overshadowed by specialized interests, disciplinary expertise, and major programs.

2) Basic skills outcomes should be re-defined by faculty and students to fit the educational needs of each learner and expanded to include the development of interpersonal competence and the complex skills needed to function effectively as a global citizen and a lifelong learner. Faculty must use instruction (and technology) which treat students as individual learners. As **individuals**, their differences must be appreciated; they should be able to obtain personal assistance in the process of life and career planning, the development of learning goals and objectives, and the creation and execution of learning activity plans. As **learners**, they should be accorded the rights and responsibilities of self-directed, lifelong learning and participate in the development of their educational objectives and learning activities.

3) Instructional practices are needed which better integrate theory and practice, knowing and valuing. Increased use should be made of simulation, internships, and other hands-on experiences, to give learners the opportunity to deal with problems that demand broadly based and well-integrated knowledge, skills, and values. Significant experiential learning activities should also be made available in business, government, and social ser-

vice settings. Cross-cultural experiences and service-learning activities should become a standard part of general education designed to facilitate the development of humanitarian concern, interpersonal competence, and effective citizenship.

4) The academic leadership at each American college and university needs to clearly state their unique philosophy of general education in a manner that will effectively shape institutional policy making, the development of all programs and curricula, and the organization itself. A program or divisional restructuring of higher education, equalizing power among the disciplines and requiring faculty to work together in instructional settings other than the disciplinary department, might help to overcome the defensiveness often associated with departmental organization.

5) American institutions of higher education need to develop specific plans for change. They must learn from their past experience and project alternative futures. They must become more adaptable, resilient, and willing to experiment with alternative organizational structures to deliver educational services. Greater use should be made of the Delphi method in promoting institutional participation in academic planning, management, and curriculum development.

Additional Research:

1) This study could be replicated with a larger and more diverse group of experts. Additional studies of general education would permit a comparison of different types of institutions providing American higher education (or even institutions of higher education outside the U.S.).

2) Philosophical research which analyzes the theoretical basis for the existing general education curriculum in American higher education and proposes a rational basis for a futures-oriented curriculum is critically needed.

3) Studying the role of perception about the future as it relates to processes of adult development and planned change by individuals, groups, organizations, and communities is a clearly indicated need.

4) Individuals and institutions currently developing general education in light of futures research data should create a national consortium project seeking to develop institutional case histories of their general education programs, evaluation of current effectiveness (in terms of student outcomes), and "strategic" plans for future advancement.

Postscript

If American colleges and universities are indeed a "global resource," and if general education is the core of the liberal learning they offer, then the development of this aspect of the curriculum is a matter of strategic significance for the future of "spaceship" earth. Instead of past-oriented curriculum development by default, the present needs creative academic leaders who are "trying to seize hold of the future and to guide it, and not just to react to what otherwise will happen" (Three Thousand Futures, 1980, p. 84).

This study demonstrates that experts can use futures research data to produce concrete curriculum development recommendations which are especially useful in the current movement to reform the general education curriculum because they counterbalance the weight of traditional curricular practice. This futures research study also suggests a method and a direction for institutional planning and research, and general education curriculum development. We must create a future-oriented core of learning for students and stimulate global, future-oriented leadership in American higher education.

REFERENCES

Association for Institutional Research. Toward 2001: The IR perspective. Forum 1981 proceedings. U.S. Education Resources Information Center, ERIC document ED 213 378.

Bailey, S. K. Needed changes in liberal education. Educational Record, 1977, 58, 250-258.

Beach, D. Futurism and implications for education. Contemporary Education, 1981, 52, 228-231.

Botkin, J. W.; Mahdi, E.; and Malitza, M. No limits to learning: Bridging the human gap. Elmsford, N. Y: Pergamon Press, 1979.

Boucher, W. I. (Ed.) Selected bibliography. In Morrison, J. L. and others, Applying methods and techniques of futures research (New directions for institutional research No. 39). San Francisco: Jossey-Bass, 1983.

_____. The study of the future: An agenda for research. Washington, D.C.: U.S. Government Printing Office, 1977.

Bowen, H. R. The state of the nation and the agenda for higher education. San Francisco: Jossey-Bass, 1982.

Boyer, E. L. The core curriculum: A search for commonness. Liberal Education, 1980, 66, 277-284.

_____. Reflections on the great debate of '83. Phi Delta Kappan, 1984, 65, 525-530.

Boyer, E. L. and Kaplan, M. Educating for survival. Change, 1977, 9, 22-23.

Boyer, E. L. and Levine, A. A quest for common learning: The aims of general education. Washington, D.C.: The Carnegie Foundation for the Advancement of Teaching, 1981.

Carnegie Foundation for the Advancement of Teaching. Missions of the college curriculum: A contemporary review with suggestions. San Francisco: Jossey-Bass, 1977.

Conkright, A. M. "Only connect . . ." A passionate plea for an integrated curriculum. A position paper (1982) for U.S. Education Resources Information Center, ERIC document ED 231 409.

Cornish, E. What we must do: An agenda for futurists. In Feather, F. (Ed.), Through the '80s: Thinking globally, acting locally. Washington, D.C.: World Future Society, 1980.

_____. The study of the future. Washington, D.C.: World Future Society, 1977.

Crawford, J. E. and Crossitt, W. B. Effective decision-making within the organization: A comparison of regular, NGT and Delphi group process. Paper presented at the annual meeting of Western Speech Communication Association, 1980. U.S. Educational Resources Information Center, ERIC document ED 182 786.

Curtis, M. H. Toward a redefinition of liberal education. Conference report of the 70th annual meeting of the Association of American Colleges, 1984.

Dewey, J. Democracy and education. New York: The Free Press, 1916.

Etzioni, A. An immodest agenda: Rebuilding America before the 21st century. New York: McGraw-Hill, 1983.

Gaff, J. G. Avoiding the potholes: Strategies for reforming general education. Educational Record, 1980, 61, 50-59.

_____. General education today: A critical analysis of controversies, practices, and reforms. San Francisco: Jossey-Bass, 1983.

Global 2000 report to the president: Entering the twenty-first century. Volume I: the summary report. Prepared by the Council of Environmental Quality and the Department of State, Washington, D.C.: U.S. Government Printing Office, 1980.

Global 2000 report to the president: Entering the twenty-first century. Volume II: the technical report. Prepared by the Council of Environmental Quality and the Department of State, Washington, D.C.: U.S. Government Printing Office, 1980.

Global 2000 report to the president: Entering the twenty-first century. Volume III: documentation on the government's "global model." Prepared by the Council of Environmental Quality and the Department of State, Washington, D.C.: U.S. Government Printing Office, 1981.

Heydinger, R. B. Institutional research and planning: Is futures research the next step? In Morrison, J. L.; Renfro, U. L.; and Boucher, W. I. (Eds.), Applying methods and techniques of futures research (New directions for institutional research, No. 39). San Francisco: Jossey-Bass, 1983, pp. 95-98.

Hymovitz, L. Schools for survival in the twenty-first century. The Clearing House, 1981, 55, 32-34.

Kauffman, D. Society and foresight. Journal of Thought, 1981, 16, 1-19.

Kerr, C. Quoted in Presidents or faculties: Who should make the key decisions about the curriculum? The Chronicle of Higher Education, 25 January 1984, 27, 21.

Levin, H. H. The identity crisis of educational planning. Harvard Educational Review, 1981, 51, 85-93.

Levine, A. and Weingart, J. Reform of undergraduate education. San Francisco: Jossey-Bass, 1973.

Lewis, A. J. Education for the 21st century. Educational Leadership, 1983, 41, 9-10.

Martin, W. B. A college of character: Renewing the purpose and content of college education. San Francisco: Jossey-Bass, 1982.

Murphy, Elaine M. The environment to come: A global summary. Projection description of the Population Reference Bureau, Inc., 1983. U.S. Education Resources Information Center, ERIC document ED 228 031.

Naisbitt, J. Megatrends: Ten new directions transforming our lives. New York: Warner Books, 1982.

New study challenges Global 2000 report. The Futurist, 1983, 17, 13.

Peccei, A. One hundred pages for the future: Reflections of the President of the club of Rome. New York: Pergamon Press, 1981.

Peters, R. O. Proactive students in global education. Understanding the Third World: A moving force in our lives. Project description (1982a) for U.S. Education Resources Information Center, ERIC document ED 211 493.

_____. Perceptions of the year 2000: Then, now, and in the future. Developing the critical analysis skills and time reference perspective of proactive action students in environmental and global education curricula. Project description (1982b) for U.S. Education Resources Information Center, ERIC document ED 212 483.

Postman, N. Engaging students in the great conversation. Phi Delta Kappan, 1983, 64, 310-316.

Quistwater, J. M. R. General education for the too late generation. Paper presented to the annual assembly of the Education Section of the World Future Society, 1979. U.S. Education Resources Information Center, ERIC document ED 180 569.

Ravitch, D. On thinking about the future. Phi Delta Kappan, 1983, 64, 317-320.

Sacks, A. B. and others. Current issues in environmental education and environmental studies. Selected papers from the annual conference of the National Association for Environmental Education, 1982. U.S. Education Resources Information Center, ERIC document ED 229 282.

Shane, H. G. Educating for a new millennium: Views of 132 international scholars. Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1981.

Three thousand futures: The next twenty years for higher education. Final report of the Carnegie Council on Policy Studies in Higher Education. San Francisco: Jossey-Bass, 1980.

Todd, E. S. Impact of the "steel collar" revolution and robotics upon higher education. Association for Institutional Research annual forum paper, 1983. U.S. Education Resources Information Center, ERIC document ED 232 515.

Toffler, A. (Ed.) Learning for tomorrow: The role of the future in education. New York: Vintage Books, 1974.

Tucker, J. Our global future: Implications for social studies education in the United States. Paper presented at the annual meeting of the Social Science Education Consortium, 1982. U.S. Educational Resources Information Center, ERIC document ED 216 991.

Tussman, J. Experiment at Berkeley. New York: Oxford University Press, 1969.

Wharton, C. R., Jr. General education: Stopping the pendulum--but can we get off? Keynote address to annual conference of the Community College General Education Association, 1982. U.S. Education Resources Information Center, ERIC document ED 216 717.